

AMENDMENTS TO THE CLAIMS

The following claim listing includes the status of all claims submitted in this application, including amendments presently submitted.

LISTING OF CLAIMS

1(previously presented). An extrusion die for use in producing perforated stick-type propellant comprising:

- (a) a die blank having a central passage therethrough, said passage having an unrestricted tapered entry;
- (b) an open lattice webbing structure beyond said tapered entry in said central passage for passing extruding propellant, said webbing structure providing struts in and spanning said central die passage; and
- (c) an array of die pins carried by said webbing structure arranged in a pattern for imparting a pattern of perforations in material forced through said central passage, each pin having a fixed end attached to said lattice webbing structure and a free end extending parallel to said passage beyond said webbing structure.

2(previously presented). An extrusion die as in claim 1 wherein said die is formed as a unitary structure.

3(previously presented). An extrusion die as in claim 1 wherein said central passage is tapered slightly in the vicinity of said lattice webbing structure.

4(previously presented). An extrusion die as in claim 1 wherein said open lattice structure is machined in said central passage.

5(previously presented). An extrusion die as in claim 2 wherein said open lattice structure is machined in said central passage.

6(previously presented). An extrusion die as in claim 1 wherein at least some of the pins are formed integrally with said open lattice webbing structure.

7(previously presented). An extrusion die as in claim 4 wherein at least some of the pins are formed integrally with said open lattice webbing structure.

8(previously presented). An extrusion die as in claim 1 wherein one or more of said pins is separately manufactured and fixed to said lattice webbing structure.

9(previously presented). An extrusion die as in claim 8 wherein separately manufactured pins are press fit into openings provided in said lattice webbing structure.

10(previously presented). An extrusion die as in claim 1 wherein one or more of said pins is of a non-round cross section.

11(previously presented). An extrusion die as in claim 1 wherein the number of pins arranged in said pattern is selected from 7, 19 and 37 and wherein said pattern includes a central pin.

12(previously presented). An extrusion die as in claim 11

wherein the number of pins is 7.

13(previously presented). An extrusion die as in claim 4 wherein said machining includes electron discharge machining.

14(previously presented). An extrusion die as in claim 5 wherein said machining includes electron discharge machining.

15(previously presented). An extrusion die as in claim 1 wherein the area of the open lattice webbing structure is tapered slightly to enhance reforming of extruded material into sticks.

16(previously presented). A method of extruding perforated stick-type propellant including the step of:

extruding propellant through the die blank of claim 1, said propellant passing through said die blank maintaining a direction substantially parallel to said pins along the length thereof.